AMENDMENTS TO THE SPECIFICATION:

Kindly replace the paragraph beginning at page 5, line 10, with the following amended paragraph:

FIG. 10 is a diagram indicting a relationship between the [[numb]] number of production supply-waiting days and the sales opportunity miss factor;

Kindly replace the paragraph beginning at page 10, line 12, with the following amended paragraph:

The data input portion 24, as a hardware construction, corresponds to the keyboard interface 56, the keyboard 58 and the mouse 60. The scheme output portion 34, as a hardware construction, corresponds [[t]] 't' the graphics controller 52 and the CRT 54.

Kindly replace the paragraph bridging pages 10 and 11, with the following amended paragraph:

The operation of the demand-supply scheme planning apparatus 20 will next be described. FIG. 3 is a construction diagram showing an example of a supply chain as a specific example in which a demand-supply scheme is planned by the demand-supply scheme planning apparatus 20. As shown in FIG. 3, the supply chain includes two sales step 102, 104 as dealers that sell products A, B, C, D, product-producing steps 112, 114 as product-producing factories each of which produces some of the products A, B, C, D, and supplies produced products to the two sales steps 102, 104, parts-producing steps 122, 124 as parts-producing factories each of which produces some of parts a1, b1, c1, d1 for producing the

products A, B, C, D and supplies produced parts to the product-producing steps 112, 114, parts-supplying steps 126, 128 as parts supplier companies that supply some of parts a2, b2, [[c3]] c2, d2 for producing the products A, B, C, D to the product-producing steps 112, 114, and parts-supplying steps 132, 134, 136 as parts supplier companies that supply parts a11, a12, b11, b12, c11, c12, d11, d12 for producing the parts a1, b1, c1, d1 to the parts-producing steps 122, 124. In FIG. 3, parenthesized Roman letters in each step indicate products or parts, and arrows between steps indicate shipment in accordance with an order.

Kindly replace the paragraph beginning at page 12, line 2, with the following amended paragraph:

FIG. 5 exemplifies a Petri Net model regarding products A, B in the supply chain illustrated as a specific example in FIG. 3. In FIG. 5, steps and resources are represented by circle symbols, and actions are represented by vertical bar symbols, and durations needed for the actions are represented by square symbols. In this Petri Net model, the sales step 102, 104, the ~~parts-producing~~ product-producing steps ~~122, 124~~ 112, 114, and the parts-producing steps 122, 124 each have places and transitions as follows.

Kindly replace the paragraph bridging pages 26 and 27, with the following amended paragraph:

When the routine is executed, the CPU 42 of the demand-supply scheme planning apparatus 20 executes a process of inputting an amount of order received Xn for a scheme period (in a unit of a month, a week, a day, etc.) An (n = 1, 2, 3,

...(integer)) of the sales step A via the data input portion such as the keyboard 58 or the like (S300). Subsequently, the CPU 42 calculates lead times t1, t2 that are time durations needed between the order for products placed from the sales step A to product-producing steps and the purchase of the products (S302). The CPU 42 shifts the scheme periods Bn (n = 1, 2, 3, ... (integer)) and Cn (n = 1, 2, 3, ... (integer)) of the product-producing steps B, C from the scheme period An of the sales step A by the lead times t1 and t2 so as to set the scheme periods An, Bn, Cn with equal spans (S304). Next, the CPU 42 distributes the amount of order placement Xn to the product-producing steps B, C using a distribution ratio αn (arbitrary value) that is set for each scheme period An of the sales step A (S306). Subsequently, the CPU 42 calculates amounts of order Yn, Zn placed from the sales step A to the scheme periods Bn, Cn of the product-producing steps, as in the following equations (1), (2) (S308). Based on the calculated amounts of order placement Yn, Zn, the CPU 42 calculates a profitability index (S310). Since the distribution ratio αn is a parameter, the distribution ratio αn is changed in accordance with the restricting conditions (the order receivable ranges of the product-producing steps B and C, and the like) (S312). The distribution ratio αn is changed until the profitability index maximizes (S314). After the changing of the distribution ratio αn ends, the CPU 42 outputs the presently calculated amounts of order placement Yn, Zn as scheme values [[(S116)]] (S316), and then ends the routine. In this manner, the amount of order placement can be more appropriately distributed, taking into consideration the lead time, that is, a time required between order and purchase. Furthermore, since the amount of order Yn, Zn received by the product-producing steps B, C for the scheme periods Bn, Cn are calculated based on the distribution

ratio αn that is determined so as to maximize the profitability index within the range of restricting conditions such as the order receivable ranges, it is possible to plan such a scheme that the profit of the corporate entity becomes as great as possible. The distribution based on the lead time is not limited to the initial distribution at the time of order placed by a sales step, but is also applicable to distribution at the time of order placed by a product-producing step or order placed by a parts-producing step.

$$Y_n = \alpha_n \times X_n \times \left(\frac{T_n - t_1}{T_n} \right) + \alpha_{n+1} \times X_{n+1} \times \frac{t_1}{T_{n+1}} \quad \ldots(1)$$

~~$$Z_n = (1 - \alpha_n) \times X_n \times \left(\frac{T_n - t_2}{T_n} \right) + (1 - \alpha_{n-1}) \times X_{n+1} \times \frac{t_2}{T_{n+1}} \quad \ldots(2)$$~~

$$Z_n = (1 - \alpha_n) \times X_n \times \left(\frac{T_n - t_2}{T_n} \right) + (1 - \alpha_{n+1}) \times X_{n+1} \times \frac{t_2}{T_{n+1}} \quad \ldots(2)$$

Kindly replace the paragraph beginning at page 31, line 2, with the following amended paragraph:

In this embodiment, each step is provided with a single production scheme planning apparatus ~~1020, 1030, 1040~~. Each planning apparatus exchanges with each of the preceding and succeeding steps information regarding numbers of material flow, that is, scheme numbers of order receipt and placement, purchase and supply, and then plans a production scheme for its own step. Each production scheme planning apparatus ~~1020, 1030, 1040~~ has a hardware construction as shown in FIG. 2, as in the foregoing embodiment.

Kindly replace the paragraph beginning at page 36, line 16, with the following paragraph:

The order receipt scheme processing portion 1031 is able to automatically [[plann]] plan an order receipt scheme. The order receipt scheme processing portion included in the leading step in the entire system does not receive a number of order placement from a post-step, and therefore determines a number of order receipt based on an input or a prediction.

Kindly replace the paragraph bridging pages 36 and 37 with the following amended paragraph:

The production scheme processing portion 1032 plans a production scheme based on the order receipt scheme planned by the order receipt scheme processing portion 1031. The production scheme processing portion 1032 can simply determine a scheme number of production directly from the scheme number of order receipt. However, if stock exists, the production scheme processing portion [[1031]] 1032 needs to subtract the number of stock from the scheme number of order receipt. If there is a restricting condition, the production scheme processing portion 1032 needs to adjust the scheme number of production. For example, if the calculated scheme number of production exceeds a maximum number of pieces that can be produced, which is determined by the expression (3), the difference therebetween is posted as a number of order receipt balance to update the order receipt balance retaining portion 1036. It is also possible to predict transition of the number of order receipt balance and thereby derive a production scheme by focusing attention on regularity of changes in the number of order receipt balance.

Kindly replace the paragraph bridging pages 40, 41 and 42 with the following amended paragraph:

After the scheme number of production is determined, the supply scheme processing portion 1035 plans a supply scheme. First, the supply scheme processing portion 1035 determines a sum of the scheme number of production calculated by the production scheme processing portion 1032 and the number of stock stored in the number-of-stock retaining portion 1037 (that is, a shippable number). Therefore, if the shippable number is greater than or equal to the scheme number of order receipt calculated by the order receipt scheme processing portion 1031, the scheme number of order receipt is immediately set as a basic value of the scheme number of supply. The difference between the shippable number and the basic value is determined as a number of stock, whereby the order receipt balance retaining portion 1036 is updated. If the shippable number is less than the scheme number of order receipt, the shippable number is determined as a basic value of the scheme number of supply. In this case, the number of stock becomes zero. If there is only one post-step, the basic value determined in the above-described process is simply sent as the scheme number of supply to the production scheme processing portion [[1040]] of the post-step. If there are a plurality of post-steps, the basic value is distributed to the post-steps in accordance with the scheme numbers of order receipt sent from the post-steps provided that the shippable number is greater than or equal to the scheme number of order receipt. However, provided that the shippable number is less than the scheme number of order receipt, it is necessary to perform adjustment, such as allocation in accordance with the ratio between the basic value and the scheme number of order receipt sent from each post-step.

Before the scheme number of supply is sent to the post-step, the supply scheme processing portion 1035 performs such a correction as to meet a restricting condition set in the supply scheme processing portion 1035, if necessary. Furthermore, if a restricting condition regarding material flow, it is necessary to perform a correction that complies with the condition.

Kindly replace the paragraph beginning at page 43, with the following amended paragraph:

Although in this embodiment, the process of comparing scheme numbers is performed, the scheme numbers compared are the schème numbers of identical vehicles, identical models or options, or identical parts. Therefore, it should be apparent that if the production scheme planning apparatuses ~~1020, 1030, 1040~~ handle a plurality of kinds of vehicles, production scheme planning or the like is performed for each kind of vehicle.

Kindly replace the paragraph beginning at page 44, line 10, with the following amended paragraph

The invention is also applicable to a program that causes a computer to function as a scheme planning apparatus such as the demand-supply scheme planning apparatus 20 or the production scheme planning apparatuses ~~1020, 1030, 1040,~~ and is also applicable to a recording medium in which such a program is recorded in a computer-readable fashion. The recording medium includes CD-ROMs, floppy disks, DVD-ROMs, and various other media. The recording medium

may also be a computer-readable program transmission medium that causes a computer to function as a scheme planning apparatus.